

# Chapter One

## Introduction

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*The Community Forest  
Street Tree Policy Committee  
Vision Statement*



**City of Carlsbad  
Community Forest Management Plan**

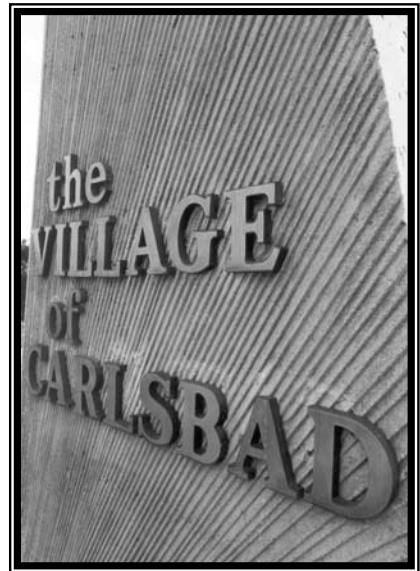
## Chapter 1 - Introduction

### Managing a Diverse Urban Forest

*"The City of Carlsbad includes valuable urban tree resources that provide a variety of...benefits to the community."*

#### Background – City of Carlsbad

The City of Carlsbad is a progressive city that has retained much of its agricultural roots and beach-city charm. The City, like much of Southern California, provides opportunities for a high quality of life in a climate that encourages outdoor activities from beaches and golf to parks and outdoor shopping. Many of the City's features contribute to the lifestyle available to Carlsbad's citizens. Among them are the natural and manmade parks, streetscapes, lagoons, and other forested open spaces throughout the City. Trees within these areas, comprising a portion of the community forest, may be the most visible landscape features of the City but the most often overlooked by its citizens. As such, the purpose of this Community Forest Management Plan is to provide guidance to conserve Carlsbad's community forest through proper design, maintenance, and community education.



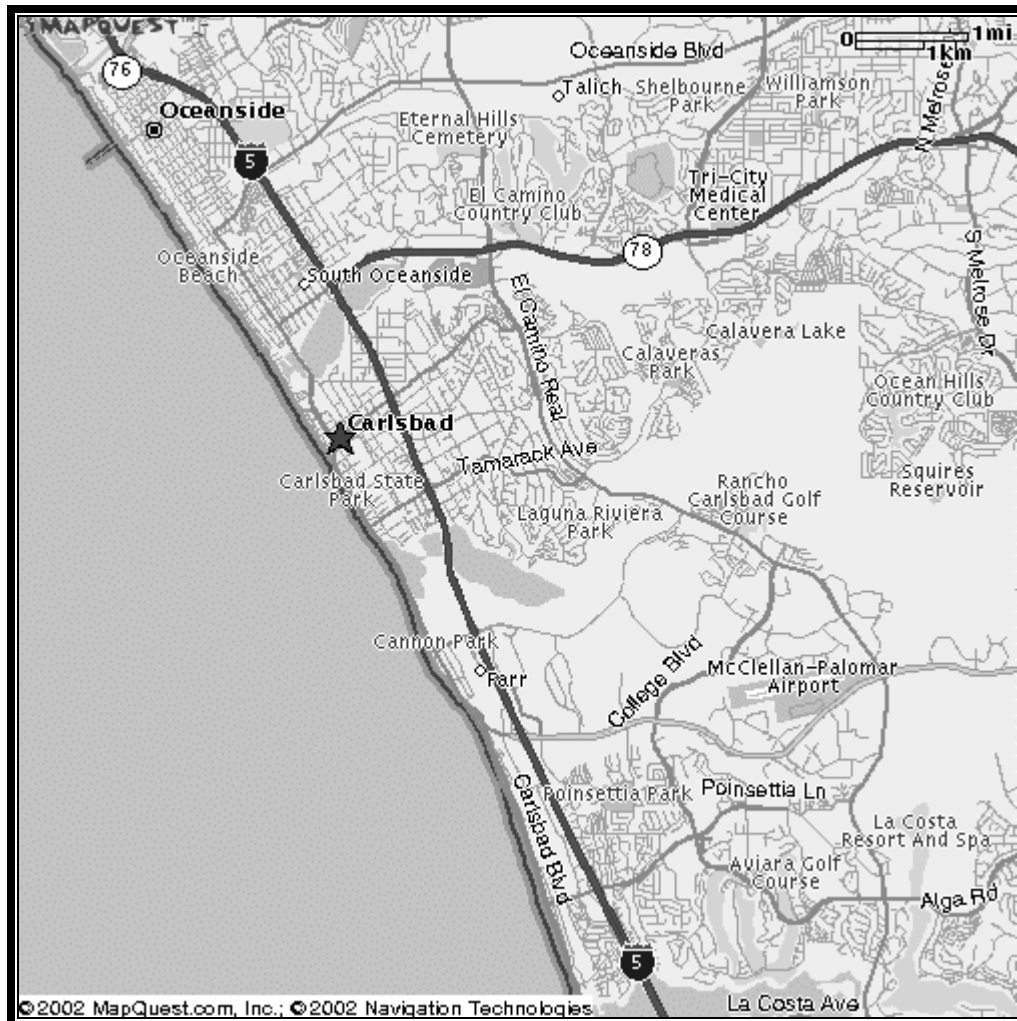
The City of Carlsbad is located in northern San Diego County (Figure 1, page 2). It is a beach community bordering the Pacific Ocean and the cities of Oceanside, Encinitas, and San Marcos. Incorporated in 1952, Carlsbad comprises some 42 square miles and has a population of nearly 80,000 residents. The City continues to expand with new development in several areas. The City's layout can be summarized as follows:

- retail establishments in the western portions and along Interstate 5
- residential neighborhoods in the north, south, and east
- high technology light industrial, service and commercial business in the central and east
- preserved open space and lagoons in the north and south
- agriculture in the east

Carlsbad's climate is generally mild, dominated by cool coastal breezes, but can be hot in inland areas. This generally temperate climate heavily influences the types of trees that may be successfully grown within the City. The average temperatures vary between 73° F in July and 58° F in January. The area has low humidity with an average annual rainfall of about seven- to ten inches, most of it falling between October and February.

Along with climate, soil type is also an important factor determining success of tree establishment and growth in the Carlsbad area. Soils include various clays, clay loams, sandy loams, alluvial loam, and cut and fill with sandy loam. The native vegetation types occurring in and around Carlsbad include coastal sage scrub and chaparral associations. Trees native to the area include coast live oak (*Quercus agrifolia*), sycamore (*Platanus racemosa*), and Mexican elderberry (*Sambucus mexicana*).

Figure 1. City of Carlsbad Vicinity Map



## The Community Forest

Community forests are similar to wild land forests but have some notable differences. The primary difference is that community forests are natural resources created and sustained by people, whereas wild land forests are natural resources that can thrive without human interference. Like a wild land forest, the community forest is not limited to trees alone. Wild land forests include the vegetation and wildlife, streams and drainages, soils, and microbial organisms (microbes) that form interdependencies with the trees. Community forests include all of the related landscape vegetation on both public *and* private property, along with the wildlife, soils, microbes, and watersheds within the urban environment. Trees, due to their large size, spreading canopies, and sometimes-showy flowers, are arguably the most valuable and visible component of the community forest. Further, urban trees, unlike wild land trees, are affected by human-created infrastructure, by public safety-driven maintenance requirements, and by the typically lower quality-growing environment to which they must adapt.

Before urbanization, the landscape in and around Carlsbad was dominated by coastal sage scrub. The area is not inclusive of naturally occurring, large forested expanses. The average rainfall in Carlsbad would support only a handful of native tree species that have adapted to the local climate such as coast live oak, California sycamore, Mexican elderberry, and willow trees. These trees occur individually and in small groves, mainly limited to streamside and drainage locations. However, coastal Southern California's mild climate can support a large number of tree species when consistent supplemental water is made available.

Because supplemental water is available through advanced irrigation systems, trees have been planted in Carlsbad that originate from many countries throughout the world. Native California trees play a minor role within the developed areas of the City, but still occur in many open space areas where, in spite of encroaching invasive species, they continue to survive. Despite the fact that Carlsbad's community forest is largely absent of native trees, as is the case with many southern California cities, the Urban Forest is an integral part of the City that must be maintained even more intensively, perhaps, than many other City assets. Shrubs, turf, sidewalks, streets, structures, utilities, and natural areas all affect or are affected by trees (Irvine Public Works 1991). In addition, wildlife such as birds, small mammals, and insects, all utilize the community forest.

Delineating where the community forest begins and ends can be very difficult, especially in sprawling cities that are often separated from neighboring cities by only a demarcation on a map. The trees in neighboring communities can have an impact on City trees. For example, disease or insect problems can spread rapidly from city to city. These problems can be exacerbated if inadequate maintenance is applied to trees in neighboring communities (Irvine Public Works 1991).

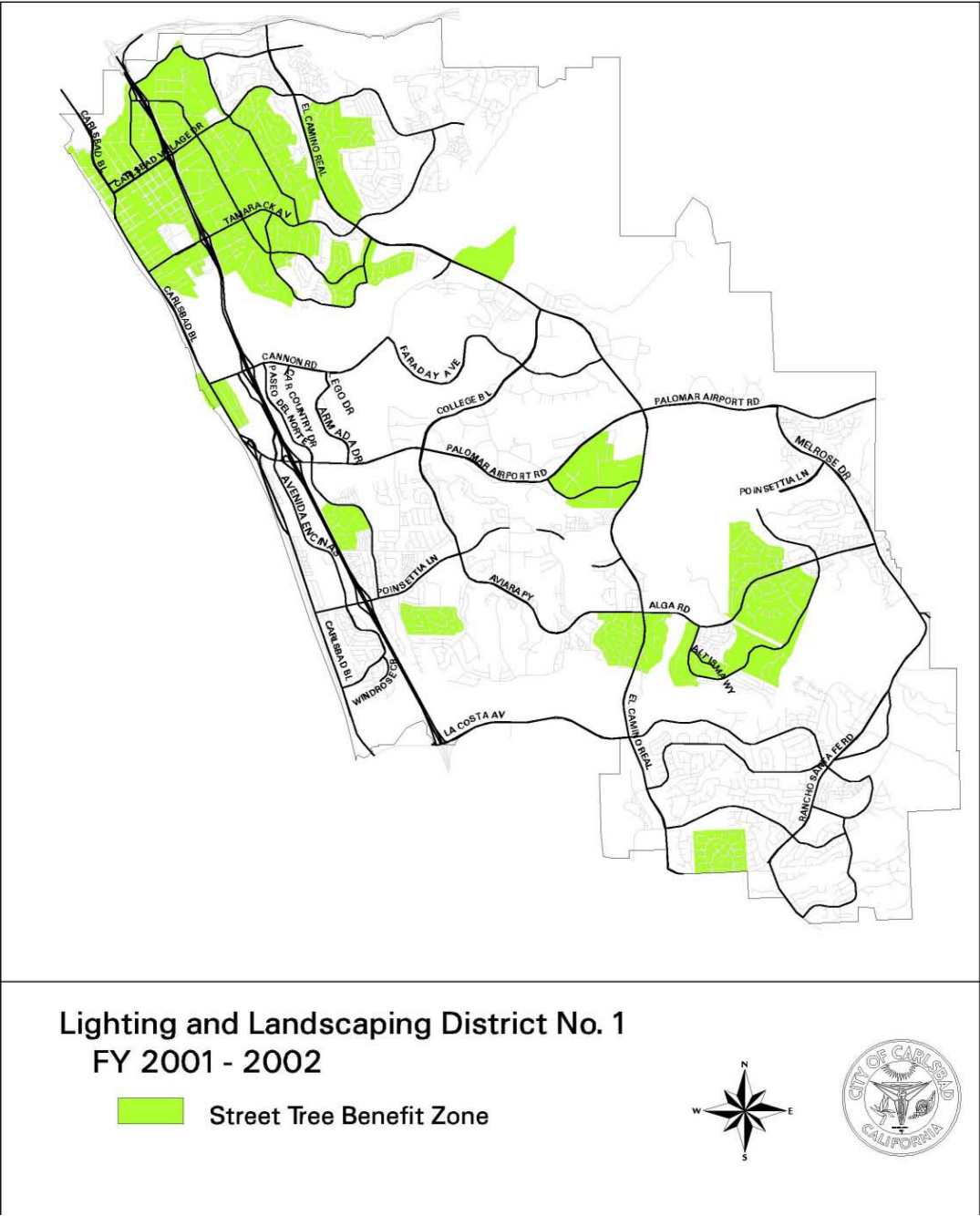
Within Carlsbad, citizens or associations manage the majority of trees in the community forest. City-managed trees exist in and around large pockets of mismanaged trees with high susceptibility for the spread of insect pests and diseases. As such, it is an important goal of this CFMP to define a successful program for educating citizens about caring properly for the many trees that are under their care.

This Community Forest Management Plan is applicable to trees throughout Carlsbad, both private and public, but addresses specifically those portions of the community forest that the City can influence directly, that is the trees within the Street Tree Assessment District public rights-of-way (STAD). For the purpose of this plan, community forest refers to City-managed landscapes and open spaces within the STAD (Figure 2, page 4).

### **Purpose of Community Forest Management**

As suggested, perhaps the most important consideration in community forest management is people. Community forests are created, managed, and sustained by people. Those same people help make decisions regarding tree removal, tree retention, tree replacement, and tree maintenance. People can affect the landscape by imposing landscape-changing impacts in the community forest that are comparable to natural disasters in a wild land forest. Like natural disasters, some of these have positive affects, while others are primarily negative. Educating people to make decisions regarding the community forest, or trees in their own yard, based on sound and reliable information results in a healthier and safer urban forest with more positive human impacts than negative.

**Figure 2. STAD PRW (tree benefit) Zone Map.**



## **Carlsbad's Community Forest – Current Status**

Determining the current health, condition, species diversity, age, and size status of the community forest is critical to establishing appropriate management strategies. The City does not possess an up to date tree inventory. However, information collected in 1993 and recent estimates reveal that Carlsbad's urban forest within the public rights-of-way includes over 10,500 trees and 3,300 planting spaces. Among the 10,500 trees are 110 genera represented by 195 species. The most common genus is *Pinus* (pine), comprising approximately 17 percent of the forest. This genus is followed by *Eucalyptus* (gum) (14 percent), *Washingtonia* (palms) (6 percent), *Schinus* (pepper) (5 percent) and *Cupaniopsis* (carrotwood) (4.2 percent). The remaining 105 genus' account for 53.8 percent of the population. No single species represents more than 4 percent of the population (Urban Forestry Consultants 1993).

Both the genus and species population percentages throughout the City are in line with widely accepted standards that no single species represent more than 5- to 10- percent of a tree population and no genus more than 30 percent. This population distribution is discussed in more detail in Chapter 6.

The portions of Carlsbad's community forest outside the STAD (private trees in residential and commercial areas) include many more trees than the STAD areas, with estimates to 75,000 trees. Because there is no information specific to areas outside the STAD, the net tree species diversity throughout the City is unknown. However, it is believed that diversity throughout the City may vary from street to street or block to block, but that healthy diversity is maintained on the City-scale. The STAD trees and tree planting sites are managed by the General Services Department of the Public Works Major Service Area (MSA). Other community forest trees are managed by private citizens, homeowner associations, or property managers.

The City of Carlsbad Community Forest includes valuable urban tree resources that provide a variety of environmental, aesthetic, and economic benefits to the community. A large percentage of the forest appears to be in overall good condition, with nearly 90 percent of the street trees rated in this category (Urban Forestry Consultants 1993). This is a testament to the tree maintenance practices of the City and the value placed on City-managed trees.

## **Street Tree Policy Committee**

Despite the apparent overall good condition of Carlsbad's street trees, members of the public have voiced concern over removal and maintenance practices. Public concern is a common response in most cities to occasional removal of large, old trees or new tree planting. In response to the public testimony, the City proactively formed a citizen's committee to address tree removal and tree care within the community forest it manages. The Committee, appropriately named the Street Tree Policy Committee (STPC), formed in November 1999. Over a two-month period, the STPC met to discuss and develop a mission statement, goals, a purpose statement, and a comprehensive Street Tree Policy. The STPC's Final Report (January 25, 2000) is available in its entirety at all City Library branches and by request to the City General Services Department. The City's Municipal code regarding trees in the public right-of-way is viewable at [WWW.bpcnet.com/codes/carlsbad](http://WWW.bpcnet.com/codes/carlsbad), Title 12 – Trees and Shrubs.

In summary, the STPC's Final Report addresses the need to update the City's 30-year old street tree policy. In so doing, the STPC acknowledged the many benefits of urban trees to those that live amongst them and the importance of sound tree and community forest

management. The report includes a Statement of Policy that directs management of tree planting, removal, replacement, and maintenance, as well as heritage trees, and public appeals. The purpose of the Statements of Policy is to improve the condition of the urban forest and streamline management of its resources and the issues that are commonly associated with street trees.

One of the first tasks accomplished by the STPC was developing a Mission Statement. The STPC's Mission Statement reads:

*"To develop a recommendation to the City Council, which provides for the conservation, enhancement and management of street trees within the public rights-of-way in the area west of El Camino Real to the Ocean, between Agua Hedionda and Buena Vista Lagoons."*

As evidenced in the Mission Statement, the recommendations of the STPC focus on improving the condition of the urban forest by conservation (the most efficient use, preservation and management of tree resources) and enhancement, through proper care and maintenance. Accomplishment of the mission requires a management strategy. As such, among the recommendations strongly supported by the STPC was the creation of a Community Forest Management Plan (CFMP) for the City of Carlsbad.

To that effect, a professional natural resources and urban forestry consulting firm was retained by the City to prepare a CFMP. Shortly thereafter, a CFMP planning team was organized and included several City staff, Carlsbad's Parks and Recreation Commission, an STPC member, the consultant, and several one-meeting participants (Table 1). The planning team met four times over a period of approximately three months. The meetings centered on developing an outline for the CFMP that incorporated policies previously created by the STPC. The meetings were also conducted to provide background information regarding the City's current urban and community forest, its history and current and proposed policies, all of which would be enhanced and incorporated into the CFMP.

**Table 1.** Members of the CFMP Planning Team.

<b>Name</b>	<b>Title</b>	<b>Association</b>
Doug Duncanson	Public Works Manager	City of Carlsbad
Scott Carroll	Management Analyst	City of Carlsbad
Fred Burnell	Public Works Supervisor – Trees and Medians	City of Carlsbad
Gary Cox	Commissioner	Parks and Recreation Commission
Seth Schulberg	Commissioner	Parks and Recreation Commission
Anthony Lawson	Vice Chairman Street Tree Committee	ADL Planning Associates
Mike Huff	Sr. Project Manager/Arborist	Integrated Urban Forestry
<b>One-meeting Participants</b>		
Karl Von Schlieder	GIS Coordinator	City of Carlsbad
Geoff Armour	Historical Preservation Committee	City of Carlsbad
Martin Aguilera	Deputy Fire Marshal	City of Carlsbad Fire Department
Bill Clayton	Wild land Hazard Officer	City of Carlsbad Fire Department
Mike Smith	Division Chief/Fire Marshal	City of Carlsbad Fire Department

This CFMP is based on recommendations offered by the STPC and provides management strategies to successfully implement the STPC Statements of Policy. The management components of this CFMP are applicable to all trees within the City of Carlsbad. However, due to political boundaries, it is enforceable only in those areas within the STAD.



## Vision Statement

One important purpose of urban and community forest management plans is to provide consistent and long-term guidance for community tree programs. Building on the STPC's Mission Statement, authors of this CFMP formed a vision for Carlsbad's community forest. The vision represents the framework of this CFMP, as it is the basis for the management strategies presented herein. It strives to create a sustainable urban forest resource by proactive measures, based on the principles of conservation. Clearly, a balance between realized tree benefits and invested resources (money, time, energy) must result for a successful program (Miller 1988).

The Vision for the urban forest throughout the City of Carlsbad and within the STAD public rights-of-way, is:

*Through proactive management, achievement of a safe and healthy community forest that continues to include rich species and age diversity, provides maximum canopy cover by utilizing available planting space, unites neighborhoods with familiar tree themes, and replaces trees to sustain the forest in perpetuity, while fostering community support through education and involvement.\**

\*As previously mentioned, The Vision Statement and policies discussed within this CFMP are applicable City-wide and should be implemented on all trees that comprise the City's urban forest, including trees on private property. However, the City's jurisdiction applies only to trees within the designated STAD.

The vision statement addresses major components of successful urban and community forestry programs:

**Safe and healthy forests:** Trees that are suitable for the planting site in which they are situated and that receive proper maintenance and care are critical for achieving safe and healthy forests. The City's community forest (within the STAD) currently includes approximately 10,500 trees represented by 195 tree species. This is a large number of species and results in rich, healthy diversity. In general, Carlsbad's trees receive high quality care and maintenance.



**Canopy Cover:** A common way to evaluate the health of an urban forest and to rate the level of benefits a City is enjoying from its forest is through canopy cover. Maximum canopy cover depends on many factors including size of mature tree species, tree spacing, and availability of planting spaces, amongst others. One of the first indicators of sustainability is percent cover and available

growing space. No study has been completed regarding canopy cover in Carlsbad. However, within the STAD, canopy cover can be improved through tree planting in the available planting spaces (Urban Forestry Consultants 1993).



**Tree planting spaces:** Documentation of vacant tree planting spaces is important for purposes of achieving canopy cover goals and the related benefits, species diversity, and healthy, well-stocked community forests. Evaluation of currently vacant tree planting spaces are provided herein along with recommended species for each of the three types of planting spaces (small, medium, and large). There are approximately 3,300 available planting spaces, representing 30- percent of the STAD community forest. Planting these vacant spaces should be a City priority.

**Visual unity:** Trees can provide visual unity for a neighborhood or street. Planting one or a few complimentary species in a particular area provides citizens a stronger sense of unity and ownership. Through the use of the Uniform Street Tree Planting Map (USTPM), tree planting themes that provide unifying and complimentary plantings while maintaining overall species diversity throughout the STAD on a City-scale level can be accomplished.



**Tree replacement and sustainability:** Trees in urban settings typically have shorter life spans than their counterparts in natural settings. Because of this, a plan for tree removal and prompt replanting must be in place to assure the forest is sustainable for future generations. By definition, sustainable refers to the quality of being healthy, vital, and reproductive, now and indefinitely into the future. However, sustainability refers to more than just maintaining street trees. It includes creating a more sustainable landscape. A sustainable community forest ecosystem is a framework integrating the biological, ecological, economic, and socio-political issues (Thompson, et. al., 1994).

**Community education:** The most successful and healthy community forest programs occur where citizens are well informed about trees and have a high level of participation and involvement in forest related decisions. Trees on private property are generally not managed as well as City trees. Tree-wise citizens provide higher levels of care for trees on private property which results in an overall healthier community forest. As mentioned, trees under the influence of the City are well maintained and conform to high standards. According to some sustainability models, a sustainable urban forest is one in which all constituents of a community share a vision for the urban forest and act to realize that vision through specific goals and objectives. That is the purpose of this CFMP, to unite the City to one common vision for its urban forest.

## **Benefits of Community Forests**

Trees provide many benefits to those who live near them. Many of the valuable benefits commonly associated with trees are overlooked. A short summary of tree benefits include their contributions to:

- aesthetic character
- modification of localized urban microclimates
- human comfort and interior energy use
- reduction of air pollutants, noise, and harsh lighting

- reduction of erosion
- wastewater cleansing
- wildlife habitat for birds, mammals, reptiles, amphibians, and insects
- reduction of carbon dioxide and particulate pollutants
- higher property values

Trees add tremendous value to a community, both intrinsic and perceived. The City of Carlsbad realizes the benefits trees offer. This CFMP was initiated by the City to help guide the management of the community forest in order to maximize tree benefits.

The following Chapters of this CFMP address specific components of Carlsbad's Community Forest. Each chapter provides definitions of the City's policies and recommendations for improving the health and sustainability of Carlsbad's Community Forest.